# Diploma of Information Technology Networking (ICA50411)

The recommended Diploma study plan has the following key features:

* The recommended study plan will take a new student 15 - 18 months to complete.
* There is a focus on the latest network technologies including Microsoft, Linux and CISCO
* There is a focus on Industry certifications and students will have the opportunity to gain a number of Industry certificates as well as the TAFE Diploma.
* Student will be able to obtain a number of Skill sets without having to complete the whole Diploma.

## Underpinning Skills and Knowledge

This is **not** an entry level course. There is an amount of assumed skills and knowledge prior to commence this course. To successfully enter at this level a student needs to have either:

* Completed the Certificate IV in Information Technology Networking, or
* Completed other study equivalent to it, or
* Have work experience and knowledge equivalent to it.

## TAFE SA Recommended Study Plan for Full-Time Students

Students can either elect to complete the Certificate IV in Information, Digital Media and Technology before commencing the Diploma or can elect to only do the underpinning skills required.

The following table shows the recommended study plan for the Diploma of Information Technology Networking. Each stage is one Semester (or 6 months) in length for Full-Time students\*.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Stage 1** | | **Stage 2** | | **Stage 3** | |
| **Term 1** | **Term 2** | **Term 1** | **Term 2** | **Term 1** | **Term 2** |
| 3WNF†  3WSF†  4IVM† | 4WAD  4LXA† | 4WNI†  5LXN | 5ISV  5CNW  5CRS | 5EVC  5ECS  **Elective** |  |
| **Semester** | | | | | |
|  | 4CIN† 4CEP^ | |  | | |
| **Skill Sets** | | | | | |
| Gain the   * *Certified Networking Technician Skill Set* * *Certified IT Network Enterprise, Security or Server Administrator Skill Set* * *Certified Technology Specialist - Graphical User Interfaces Skill Set* * *System and Network Plus Technician Skill Set* | | | Gain the   * *Virtualisation Specialist Skill Set* * *Certified Network Associate Technology Specialist Skill Set* | |  |
| **Exit Qualifications** | | | | | |
| Exit with the ***Diploma of Information Technology Networking*** | | | | |  |

The following table shows the recommended study plan for the Diploma of Information Technology Networking with exit option at Certificate III and Certificate IV. Each stage is one Semester (or 6 months) in length for Full-Time students\*.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Stage 1** | | **Stage 2** | | **Stage 3** | |
| **Term 1** | **Term 2** | **Term 1** | **Term 2** | **Term 1** | **Term 2** |
| 3WHS^ †  3SWP^ †  3CUD^ †  3ITE † | 3WNF†  3WSF†  3PAC† | 4WAD  4LXA† | 4WNI†  5LXN | 5ISV  5CNW  5CRS | 5EVC  5ECS  **Elective** |
| **Semester** | | | | | |
| 4IVM † | | 4CIN † 4CEP | |  | |
| **Skill Sets** | | | | | |
| Gain the   * *Hardware Technicians Skill Set* | | Gain the   * *Certified Networking Technician Skill Set* * *Certified IT Network Enterprise, Security or Server Administrator Skill Set* * *Certified Technology Specialist - Graphical User Interfaces Skill Set* * *System and Network Plus Technician Skill Set* | | Gain the   * *Virtualisation Specialist Skill Set* * *Certified Network Associate Technology Specialist Skill Set* | |
| **Exit Qualifications** | | | | | |
| Exit with ***Certificate III in Information, Digital Media and Technology*** | | Exit with the ***Certificate IV in Information Technology Networking*** | | Exit with the **Diploma of Information Technology Networking** | |

**Please Note: This program structure is subject to change.**

**Legend:**

\* The length of time for Part-Time students will depend on the number of subjects studied in each semester.

^ These subjects are delivered in an external/online mode. Some other subjects maybe available in an external/online or blended delivery mode please check this with your lecturer at time of registration.

† Under pinning skills not required for Diploma qualification.

**How subjects are delivered and their duration will be dependent on campus specific scheduling issues. Electives will also be campus specific.**

**Please contact your local TAFE for specific course schedules.**

## Diploma of Information Technology Networking (ICA50411)

**To receive the Award students need to complete the following subjects**

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| --- | --- | --- | --- | --- | --- | --- |
| Subject | | National Code | Unit Name | | | Pre- Requisite |
| 4CEP | | **Copyright, Ethics and Privacy** | | | | |
| ICAICT418A | Contribute to copyright, ethics and privacy in an IT environment | | | N/A |
| Linux Technologies | | | | | | |
| 5LXN | | **Linux Network** | | | | |
| ICANWK504A | Design and implement an integrated server solution | | | 4LXA or proof of equivalent knowledge |
| ICANWK505A | Design, build and test a network server | | |
| CISCO Technologies | | | | | | |
| 5CRS | | **CISCO Routing and Switching Essentials (Cisco 2)** | | | | |
| ICTTEN6206A | Produce an ICT network architecture design | | | 4CIN or proof of equivalent knowledge |
| ICANWK507A | Install, operate and troubleshoot medium enterprise routers | | |
| ICANWK508A | Install, operate and troubleshoot medium enterprise switches | | |
| Virtualization Technologies | | | | | | |
| 5EVC | | **Enterprise Virtual Computing** | | | | |
| ICANWK525B | Configure an enterprise virtual computing environment | | | 4IVM, 4WAD, MS 70-640  and 642, or proof of equivalent knowledge |
| ICANWK535A | Install an enterprise virtual computing environment | | |
| ICANWK527B | Manage an enterprise virtual computing environment | | |
| 5ISV | | **Implement Server Virtualization** | | | | |
| ICTSUS5187A | Implement server virtualisation for a sustainable ICT system | | | 4IVM, 4WAD, 4WNI, MS  70-640 and 642, or proof of equivalent knowledge |
| Microsoft Technologies | | | | | | |
| 5CNW | **Complex Networks** | | | |  | |
| ICANWK529A | | | Install and manage complex ICT networks | 4IVM, 4WAD, 4WNI, MS  70-640 and 642, or proof of equivalent knowledge | |

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| --- | --- | --- | --- |
| 5ECS | Enterprise Communication Solutions | |  |
| ICANWK501A | Plan, implement and test enterprise communication solutions | 4IVM, 4WAD, 4WNI, MS  70-640 and 642, or proof of equivalent knowledge |
| ICAICT511A | Match IT needs with the strategic direction of the enterprise |
| Electives – choose one of the subjects below | | | |
| 5ISM | **IT Service Management** | |  |
| ICASAS601A | Implement change management processes | 3ITE or proof of equivalent knowledge |
| ICASAS509A | Provide client IT support services |
| 5CSN | **CISCO Scaling Networks (Cisco 3)** | |  |
| ICANWK506A | Configure, verify and troubleshoot WAN links and IP services in a medium enterprise network | 5CRS, or CCENT or proof of equivalent knowledge |
| ICANWK518A | Design an enterprise wireless local area network |
| Other information | | | |
|  | To be eligible for the Diploma students will also need to complete an additional specified competency at the certificate IV level. If a student uses the suggested study plan they obtain this in the subject 4WAD. If a student does not do this subject they need to apply for RPL for it or gain RPL in another specified competency. Please speak to your local campus for more information. | | |

## Usual Pathway pre-requisites for people entering at this level

It is usual for students undertaking this course to have completed the **Certificate IV in Information Technology Networking**. A student starting at this level will need to have completed or demonstrated knowledge in the following subjects. These are linked to vendor specific skills and you cannot undertake vendor training at the higher level without having completed the lower level.

|  |  |  |  |
| --- | --- | --- | --- |
| Subject | National Code | Unit Name | Pre- Requisite |
| Windows Sever 2012 Technologies | | | |
| 4WAD | **Windows Active Directory** | | |
| ICTTEN5201A | Install, configure and test a server **◦** | 3WSF, MTA 98-365, or proof of equivalent knowledge |
| ICANWK401A | Install and manage a server |
| ICAICT401A | Determine and confirm client business requirements |
| 4WNI | **Windows Networking Infrastructure** | | |
| ICANWK403A | Manage network and data integrity | 3WSF, MTA 98-365, or proof of equivalent knowledge |
| ICANWK406A | Install, configure and test network security |
| Linux Technologies | | | |
| 4LXA | **Linux Administration** | | |
| ICANWK408A | Configure desktop environment | 3ITE or proof of equivalent knowledge |
| ICANWK411A | Deploy software to networked computers |
| CISCO Technologies | | | |
| 4CIN | **CISCO Introduction to Networks** | | |
| ICANWK404A | Install, operate and troubleshoot a small enterprise branch network | 3WNF, MTA 98-366, or proof of equivalent knowledge |
| ICTTEN4199A | Install, configure and test a router |
| ICTTEN4198A | Install, configure and test an internet protocol network |
| ICASAS426A | Locate and troubleshoot IT equipment, system and software faults |

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| Virtualization Technologies | | | |
| 4IVM | **Install Virtual Machines** | | |
| ICANWK402A | Install and configure virtual machines for sustainable ICT | 3ITE or proof of equivalent knowledge |

**◦** Required competency for the Diploma of Information Technology Networking.

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| --- |
| Microsoft Technologies |

|  |  |  |  |
| --- | --- | --- | --- |
| 3WNF | Windows Networking Fundamentals | | |
| ICANWK305A | Install and manage network protocols | 3ITE |
| ICASAS307A | Install, configure and secure a small office home office network |
| ICANWK405A | Build a small wireless local area network |
| 3WSF | **Windows Server Fundamental** | | |
| ICANWK304A | Administer network peripherals | 3ITE |
| ICANWK303A | Configure and administer a network operating system |

## Subject Descriptions

|  |  |
| --- | --- |
| Subject | Description |
| 4CEP | This subject involves maintaining professional and ethical conduct as well as to ensure that personal information of stakeholders is handled in a confidential and professional manner when dealing with stakeholders in an information technology (IT) environment. |
| 5LXN | This subject will require students learn to deploy and administer the core networking services using Red Hat Enterprise Linux which includes the Apache Web Server, the Samba File Server, BIND Domain Name Service, the Sendmail Mail Transport Agent, the Network File System (NFS). |
| 5CRS | This course describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPng, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks. This course plus 4CIN will help students prepare for the CCENT certification. |
| 5ECS | This subject will introduce skills and knowledge required to ensure that IT services meet current and future internal operating enterprise requirements. Students will learn to install and operate enterprise messaging and content management and collaboration tools, namely Microsoft Exchange, SharePoint and Office 365. A focus on strategic planning in a business environment is an important aspect that more than ever before, addresses how IT can help create a business market advantage. |
| 5EVC | In this subject students will explore installation, configuration, and management of VMware vSphere, which consists of VMware ESXi and VMware vCenter Server. Student will learn the skills and knowledge to install and configure a virtualisation environment and understand the fundamentals of server consolidation. This subject is closely based on the VMware VCP Install and Configure certification. |
| 5ISV | Welcome to 5ISV, this subject will prove your ability to deploy and manage a Microsoft Server Virtualization infrastructure in an enterprise environment. You will also find out how to configure, manage, and maintain Windows Server 2012 R2 Hyper-V and System Center 2012 R2 Virtual Machine Manager, including networking and storage services. And you will learn how to configure key Microsoft Server virtualization features, such as Generation 2 Virtual Machines, Replication Extension, Online Export, Cross-Version Live Migration, Online VHDX Resizing, and Live Migration Performance tuning, in addition to Dynamic Virtual Switch Load Balancing and virtual Receive Side Scaling (vRSS). |
| 5CNW | This subject will introduce students to the skills and knowledge required to install and manage enterprise-wide information and communications technology networks, including Voice over IP (VoIP). |
| 5ISM | This subject will allow students to liaise with client users while providing IT support and apply techniques that facilitate the planning, implementation and monitoring of information technology change. |
| 5CSN | This course describes the architecture, components, and operations of routers and switches in larger and more complex networks. Students learn how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, and STP in both IPv4 and IPv6 networks. Students will also develop the knowledge and skills needed to implement a WLAN in a small-to-medium network. |

Students who complete the following competencies will be eligible to receive the Statement of Attainment for the following Skill Sets.

**Virtualization Specialist Skill Set**

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| --- | --- | --- | --- |
| Subject | National  Code | Competency Name |  |
| 5EVC | **Enterprise Virtual Computing** | | |
| ICANWK525A | Configure an enterprise virtual computing environment | 4IVM, 4WAD, MS 70-640  and 642, or proof of equivalent knowledge |
| ICANWK535A | Install an enterprise virtual computing environment |
| ICANWK527A | Manage an enterprise virtual computing environment |

**Certified Network Associate Technology Specialist Skill Set**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Subject | | National  Code | | Competency Name | | |  |
| 5CNW | **Complex Networks** | | | | | | |
| ICANWK529A | | Install and manage complex ICT networks | | 4IVM, 4WAD, 4WNI, MS 70-640 and 642, or proof of equivalent knowledge | | |
| 5CRS | **CISCO Routing and Switching Essentials (Cisco 2)** | | | | | | |
| ICANWK507A | | Install, operate and troubleshoot medium enterprise routers | | 4CIN or proof of equivalent knowledge | | |
| ICANWK508A | | Install, operate and troubleshoot medium enterprise switches | |
| 5CSN | **CISCO Scaling Networks (Cisco 3)** | | | | |  | |
| ICANWK506A | | | Configure, verify and troubleshoot WAN links and IP services in a medium enterprise network | | 5CRS, or CCENT or proof of equivalent knowledge | |

**Other Certificate III and IV skill sets are available depending on the study path selected.**